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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/689,176

10/20/2003

Daniel J. Simpson

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08/12/2005

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EXAMINER

ANTHONY, JOSEPH DAVID

ART UNIT

PAPER NUMBER

1714

DATE MAILED: 08/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/689,176	<b>Applicant(s)</b> SIMPSON ET AL.	
	<b>Examiner</b> Joseph D. Anthony	<b>Art Unit</b> 1714	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) 8-13, 15-17, 21-32 and 34 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7, 14, 18-20 and 33 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

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**DETAILED ACTION**

***Election/Restrictions***

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
  - I. Claims 1-20 and 32-33, drawn to a composition comprising a modified solid support that is bonded to a silicon atom and a method of making the modified solid support, classified in class 502, subclass 407.
  - II. Claims 21-31 and 34, drawn to a composition comprising a modified solid support that is bonded to a carbon atom and a method of making the modified solid support, classified in class 502, subclass 402.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I and II are unrelated do to the above described differences in the modified solid support.
- 3.
4. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.
5. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.
6. This application contains claims directed to the following patentably distinct species of the claimed invention: species wherein the R1 moieties contains a metal ion

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salt, as compared to those species wherein the R1 moieties are in the form of the free acids.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable.

Applicant is advised that a reply to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

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7. During a telephone conversation with Jill A. Fahrlander on 8/9/05 a provisional election was made with traverse to prosecute the invention of Group I, claims 1-20 and 32-33. Ms. Fahrlander also elected those species wherein the R1 moieties contains a metal ion salt. Affirmation of this election must be made by applicant in replying to this Office action. Claims 8-13, 15-17, 21-32 and 34 are thus withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention and species.

8. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

### ***Claim Objections***

9. Claim 14 is objected to because of the following informalities: It is dependent on a non-elected base claim 13. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

***Claim Rejections - 35 USC § 103***

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 1-7, 14, 18-20 and 33 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Bruening et al. U.S. Patent Number 5,250,188.

Bruening et al teach a method is disclosed for the quantitative removal and concentration of desired molecules or ions, such as gases, anions and amino acids, from a source solution which may contain larger concentrations of other molecules. The method comprises bringing the source solution into contact with a solid cation-ligand-matrix consisting of a cation complexed to a ligand molecule covalently bonded to a matrix consisting of an organic spacer bonded to a solid inorganic support through a silicon atom. The cation has an affinity for the desired molecules to form a complex between the desired molecules and the cation portion of the solid cation-ligand-matrix at binding sites initially held by H<sub>2</sub>O or other weakly coordinated ligands or via ion pairing. The desired molecule complex is broken releasing either the desired molecules or desired molecules complexed with the cation by contacting the solid cation-ligand-matrix-desired molecule complex with a much smaller volume of a receiving solution in

which said desired molecules are soluble. The concentrated ions or molecules thus removed may be analyzed and/or recovered by known methods. The process is useful in measuring the concentrations of molecules originally present at parts per billion levels; in the removal of low levels of toxic molecules such as ammonia or anions such as chromate from potable and saline water; in the preparation of ultrapure salts and gases; and in the recovery of valuable molecules present in low concentrations as in the separation of amino acids, etc., see abstract and column 3, line 15 to column 4, line 12. One of the preferred ligands used in said solid cation-ligand-matrix are amino acids, see column 5, line 24-43. The metal cations used in said solid cation-ligand-matrix read on applicant's claimed metal cations, see column 5, lines 44-50.

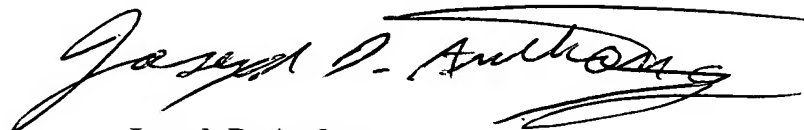
Applicant's claims are deemed to be anticipated over the disclosure of Bruening et al for the reasons set forth above. Please note that the choice of using applicant's nitrilotriacetic acid (NTA) as the ligands would have been at one envisaged since nitrilotriacetic acid (NTA) are very well known amino acids. In the alternative, it would have been obvious to one having ordinary skill in the art to actually use nitrilotriacetic acid (NTA) as the ligand in Bruening et al's solid cation-ligand-matrix of Formula 1, since nitrilotriacetic acid (NTA) are such well known amino acids. In any case, applicant has set forth no showing of any superior and unobvious results that may result from applicant's solid modified supports that use nitrilotriacetic acid (NTA) ligands in lieu of other amino acid ligand species.

***Prior-Art Cited But Not Applied***

13. Any prior-art reference which is cited on FORM PTO-892 but not applied, is cited only to show the general state of the prior-art at the time of applicant's invention.

***Examiner Information***

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Joseph D. Anthony whose telephone number is (571) 272-1117. If attempts to reach the examiner are unsuccessful, the examiner's supervisor, Vasu Jagannathan, can be reached on (571) 272-1119. The centralized FAX machine number is (571) 273-8300. All other papers received by FAX will be treated as Official communications and cannot be immediately handled by the Examiner.



Joseph D. Anthony  
Primary Patent Examiner  
Art Unit 1714

8/10/05